

$^{17}\text{F} \beta^+ \text{ decay}$ **1969Ga05**

Parent: ^{17}F : E=0; $J^\pi=5/2^+$; $T_{1/2}=64.385$ s 53; $Q(\beta^+)=2760.47$ 25; % β^+ decay=100.0

$^{17}\text{F-T}_{1/2}$: Weighted Average (external uncertainty) of (1977Al20: 64.80 s 12), (1977Az01: 64.31 s 9), (2015Gr14: 64.347 s 35) and (2016Br01: 64.402 s 39). See also (1949Br27, 1954Wo20, 1954Ko54, 1958Ar15, 1960Ja12, 1969Wo09, 1972Al42) for other $T_{1/2}$ values measured and the analysis of half-lives (2008Se10).

$^{17}\text{F-Q}(\beta^+)$: From (2017Wa10).

1949Br27: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1954Ko54: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1954Wo20: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1958Ar15: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1960Ja12: ^{17}F ; measured not abstracted; deduced nuclear properties.

1969Ga05: $^{17}\text{F} \beta^+$ -decay was studied by bombarding a 3-MeV deuterons beam a thick target PbO_2 with the Van de Graaff accelerator. A 22-cc Ge(Li) detector was used to measure γ -rays. Four runs were made to search possible 871-keV γ -ray that results from the $^{17}\text{F} \rightarrow ^{17}\text{O}^*(8.57 \text{ MeV})$ decay. The upper limit for this transition is determined as $<3.4 \times 10^{-4}$, correspondig to $\log ft > 5.6$.

1969Wo09: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1972Al42: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1977Al20: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1977Az01: $^{17}\text{F}(\beta^+)$; measured $T_{1/2}$.

1987SeZL,1987SeZR,1988Se11: $^{17}\text{F}(\beta^+)$; measured β -anisotropy.

1989Se07: $^{17}\text{F}(\beta^+)$; measured $\beta(\theta)$, oriented nuclei.

1990FuZQ,1991MaZL,1992Mi13,1993Mi33: $^{17}\text{F}(\beta^+)$; measured β -NMR spectra asymmetry change in NaF ; deduced μ .

2000Se23: $^{17}\text{F}(\beta^+)$; measured polarization asymmetry correlation.

2007Zh03: $^{17}\text{F}(\beta^+)$,(EC); measured β -NMR spectra from polarized source. ^{17}F deduced quadrupole moment.

2015Gr14: $^{17}\text{F}(\beta^+)$,(EC); measured E_β , I_β , E_γ , half-lives of the ground states; deduced ft .

2016Br01: $^{17}\text{F}(\beta^+)$; measured β radiation, half-life.

See also (2015To02, 2012Sa50: theory).

 ^{17}O Levels

E(level)	J^π	$T_{1/2}$
0 870.756 20	$5/2^+$ $1/2^+$	179.6 ps 27

 ε, β^+ radiations

E(decay)	E(level)	$I\beta^+ \dagger\dagger$	$I\varepsilon^\ddagger$	Log ft	$I(\varepsilon + \beta^+)^\ddagger$	Comments
(1889.7 3)	870.756	<0.034	<0.00042	>5.6	$<3.4 \times 10^{-2}$	av $E\beta=349.16$ 11; $\varepsilon K=0.01156$ 1; $\varepsilon L=0.0006887$ 7
(2760.47 25)	0	99.8544 15	0.1456 15	3.3562 5	100	av $E\beta=739.46$ 12; $\varepsilon K=0.0013744$ 6; $\varepsilon L=8.184 \times 10^{-5}$ 4

[†] From (1969Ga05).

[‡] Absolute intensity per 100 decays.